Appendix D:

Science Basis for the 2012 Action Agenda Update

Science Basis for the 2012 Action Agenda update

Introduction

The Action Agenda is the single road map that identifies the work needed to protect and restore the Puget Sound ecosystem. The Puget Sound Partnership guides the iterative adaptation of the Action Agenda, building on updated scientific information about ecosystem conditions and on scientific information and policy perspectives about expected and observed ecosystem responses to implementation strategies.

In 2008, the Partnership, including the Science Panel, was forming while creating the Action Agenda and Biennial Science Work Plan. The first version of the Action Agenda was built on scientific frameworks and information available at that time, knowing that a more systematic and rigorous approach would be needed. The scientific foundation of the 2008 Action Agenda includes:

- The guiding principles for ecosystem management in Puget Sound. These were developed from the work of the topic forums (discussed below), community workshops, refined by the Science Panel and vetted by the Ecosystem Coordination Board and Leadership Council. The principles, presented on page 29 of the 2008 Action Agenda, were used to refine strategies and actions, and prioritize actions.
- Five topic forum papers were prepared to promote and inspire community conversation and critical thinking about the specific problems facing Puget Sound and the strategies and actions needed to address them. The papers are organized to logically step through three initial questions (two scientific and one policy) that build to a rational conclusion about the strategies and actions needed for recovery. After a public review of the draft papers, the Science Panel coordinated a peer review of the conclusions of the science questions. Their conclusion was that the topic forum papers were a good start at synthesizing information and a process that could be modified and continued in the future. Given time and resource constraints in 2008, the topic forum papers were not revised following Science Panel review: therefore, the scientific basis for Action Agenda strategies and actions is found in the topic forum papers and the peer review summaries.
- Staff at the National Oceanic and Atmospheric Administration (NOAA)'s Northwest Fisheries Science Center led scientific steps related to Puget Sound ecosystem indicator identification in 2008. To describe a healthy Puget Sound, the Action Agenda presented a list of 103 indicators as identified by the NOAA project, which was still in progress at the time that the Action Agenda was published.
- The Action Agenda's description of the current status of Puget Sound was largely drawn from a threats and drivers analysis led by staff at NOAA Northwest Fisheries Science Center. The anticipation was that a more thorough description would be developed as part of the 2009 State of the Sound report.

2012 Update: Building from 2008

After completion of the first Action Agenda, the Partnership, including the Science Panel, embarked on identifying and building more rigorous and systematic approach to future iterations of the Action Agenda. In 2009, the Partnership identified that the Open Standards for the Practice of Conservation could be the right adaptive and performance-oriented framework for Puget Sound recovery. Staff, working with partners, prepared a series of technical memoranda that detail important advancements toward having the performance management system. Based on this early work, the Partnership adopted the Open Standards for the Practice of Conservation (The Conservation Measures Partnership, 2007) as the adaptive framework to use moving forward (Partnership's Strategic Science Plan (2010)).

The Open Standards process provides a common means of understanding and supporting the critical role of science, and a means to identify where in the project management cycle science is relevant and needed. This framework also helps define recommendations for structured science/policy collaboration that clarify roles in implementing the Open Standards cycle.

Each of the five Open Standards steps shown in Figure xx has scientific, performance and policy inputs. The choice of what actions to take and their priority and sequencing are ultimately policy choices. These choices are grounded in scientific information so that decision-makers can make the most informed decisions possible, and understand the certainty and uncertainties in their choices.

The 2012 update to the Action Agenda occurs in Open Standards steps 1 and 2: Conceptualize/Frame Project (scoping the extent of the update, content revisions and processes) and Plan Actions and Monitoring (process to develop the strategies and actions). There are multiple scientific inputs to the Action Agenda content and process as summarized in Tables E-1 and E-2. The update builds from the work in 2008 with some critical refinements: selection of ecosystem indicators, setting recovery targets, logic models to transparently link strategies and actions to outcomes, and closely linked the Action Agenda and the Biennial Science Work Plan.

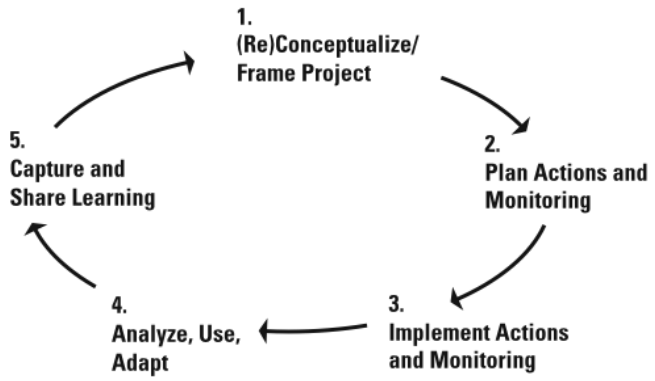

Figure E-1: The Five Steps of the Open Standards for the Practice of Conservation

Table D-1: Scientific input into the 2011 Action Agenda revision – conceptualizing and framing project

OPEN STANDARDS STEP 1: CONCEPTUALIZE/FRAME PROJECT
Framing the Partnership's 2011 work based on the 2010 Puget Sound Science Update – materials at psp.wa.gov The Science Panel convened a science-policy workshop on December 14, 2010 to help frame the Partnership's work for 2011 based on the conclusions and implications of the 2010 Puget Sound Science Update. This workshop was supported by two key documents: • State-of-the-science synthesis to support efforts to restore and protect the Puget Sound ecosystem (draft December 2010). • Science Panel Conclusions Regarding Action Agenda Implications of the Science Update (December 2010): ○ Target setting should begin immediately for the Dashboard of Ecosystem Indicators (completed February, June, October 2011) ○ Urgent need to conduct a comprehensive analysis of threats (called out in the Biennial Science Work Plan update) ○ Social science work needs to be advanced ○ Need clear process for prioritizing scientific work to identify where disagreement on scientific underpinnings of management issues arises (added to IDT tasks, also part of BSWP process to prioritize science) ○ Need to continue to support targeted scientific studies (added to IDT tasks).
Scientific contributions to target setting – materials at MyPugetSound.net • Target setting brief sheets for Dashboard indicators and technical memos for key pressures (completed January, March – May, and September 2011) • Science Panel member reviews of briefsheets and technical memos
Social science contributions to ecosystem recovery • In June 2011, the Puget Sound Institute and Washington Sea Grant convened a workshop on social science research to inform Puget Sound recovery and management. This workshop represents a first step in advancing social science work in support of ecosystem recovery. Next steps identified in this workshop included: ○ Develop a preliminary draft social sciences strategic plan ○ Convene a second workshop to provide peer review of the draft plan ○ Create a seminar series at UW on social sciences in ecosystem recovery ○ Support research activities highlighted by the workshop: a baseline literature review, an institutional analysis, an evaluation of public engagement and behaviors, and development of a conceptual model incorporating human dimension components

Table D-2: Scientific Input into 2011 Action Agenda Revision – Planning of Actions and Monitoring

OPEN STANDARDS STEP 2: PLAN ACTIONS AND MONITORING
Develop updated strategies and actions related to five key pressures using Open Standards steps: ***Strategies*** • Develop conceptual model with consideration given to information in Partnership's 2009 results chains and Puget Sound Science Update (Chapter 4). • Consider where to intervene, where not • Brainstorm new strategies and sub-strategies/refinements to existing 2008 strategies • Identify sub-strategies by assessing the likely effectiveness of candidate strategies ***Actions*** • Identify near-term actions (NTAs) • Build results chains to illustrate the logic of sub-strategies and actions • Prioritize NTAs using similar process above based on potential impacts and feasibility • Identify science gaps Scientific and technical staff from agencies and interest groups participate in strategy and action development (i.e., participate on interdisciplinary teams; attend September partner workshops) Science Panel engagement: • Review and advise on Open Standards steps used to develop strategies and actions (May 2011). Science Panel with expertise in decision-making tools reviewed the steps with PSP staff; concluded that the steps were reasonable. • Brief review of conceptual models for three of the Interdisciplinary Team strategies (June 2011). The Science Panel was asked to provide feedback on identifying gaps and concerns about incomplete or inconsistent relationships between strategies, contributing factors, pressures, and ecosystem components. ○ Land use: the model and material were distributed in early June but no feedback was provided ○ Wastewater: model was well thought out and covered the issues ○ Stormwater: no glaring omissions or errors in fact, move onto implementation strategies ○ The nearshore and floodplain models were not reviewed in June as these groups got a late start
Process for identifying priority Sub-Strategies and near-term actions • The process for prioritizing sub-strategies and near-term actions is in progress. The Science Director, working with the ECB and the Science Panel, is working to create a robust process for ranking sub-strategies. Based on input from the ECB the ranking will be based on the expected ecological impact of the sub-strategy with information on human well-being and economic costs/benefits also gathered and presented with the expected ecological impact score. A ranked list of sub-strategies based on expected ecological impact will be available in August 2012.
Develop and verify the strategy and action links to targets • Fall 2011 meetings of the ECB and Leadership Council have included discussions of a staff proposal of a target-perspective view of strategies and actions. Target-strategies linkages for 13 targets are presented in the December 2011 draft. • Presentations on target-strategy linkages were revised based on scientists' and subject matter experts' (including IDT members) advice based on their understanding of target-strategy relationships and their strengths.